CTR07/EVO PH TOUCH PANEL

User manual

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Content

MAIN WINDOW 3

Fan Speed Control 3

Booster Function 4

Air Post-Treatment Control 5

Preheating Control (Only EVO-PH) 6

Menu Selection Window 6

STATUS MENU: OPERATING STATUS 7

PROGRAM Menu: Weekly Program Control 9

Default 9

Time Table 10

Setting Speed Levels 11

CLOCK Menu: Clock Configuration 12

Setting the Day 12

Setting the Hour 12

Setting the Minutes 12

ALARMS Menu: Display of the Alarm Status 12

Parameters Menu: Setting User Parameters 15

INSTALLER Menu: Configuration of System Parameters 16

Installation 21

Wiring 21

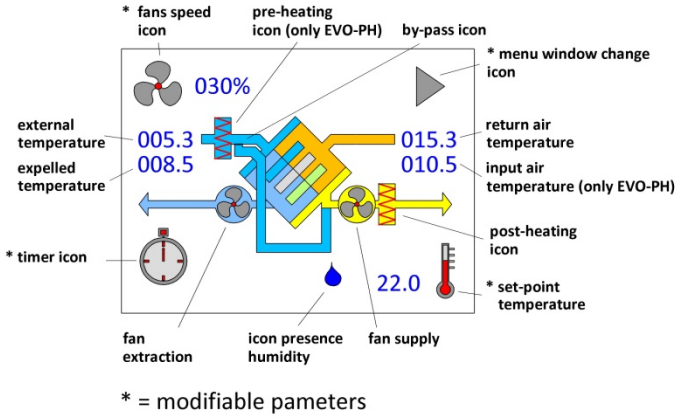
Characteristics 21

Terms of Guarantee 21

Main Window

The touch-screen control panel has been designed to control Controlled Mechanical Ventilation units with Heat Return (VMC-RC) in a simple and intuitive way. The user controls the unit by slightly pressing the graphic display icons; the arrow keys that appear after pressing a changeable parameter enable the user to interact with the unit by scrolling menu items and changing values, while any changes or selections must be confirmed by pressing **OK**.

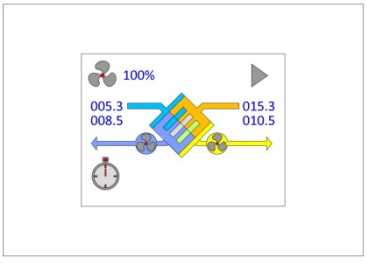
When an icon is pressed, its color turns green and the relevant parameter can be changed. When an item in a submenu is highlighted, it looks white on a blue background: if **OK** is pressed, the writing turns green and changes can be made using the arrow keys.



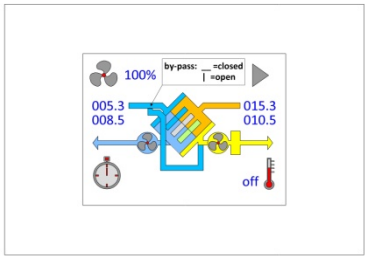
Main window

The main window is a detailed graphic representation of the machine status, from which all available functions can be activated. Press the **menu window change** icon to change window and access the other menus. From the other windows, select the window change icon and press **OK** to go back to the previous window.

For energy saving purposes, the control enters a stand-by mode (the screen goes off) after one minute of inactivity. When any point of the screen is touched, the display restarts automatically. In case of alarms, instead, the display lights up automatically for about half a second every ten seconds.



Unit without by-pass



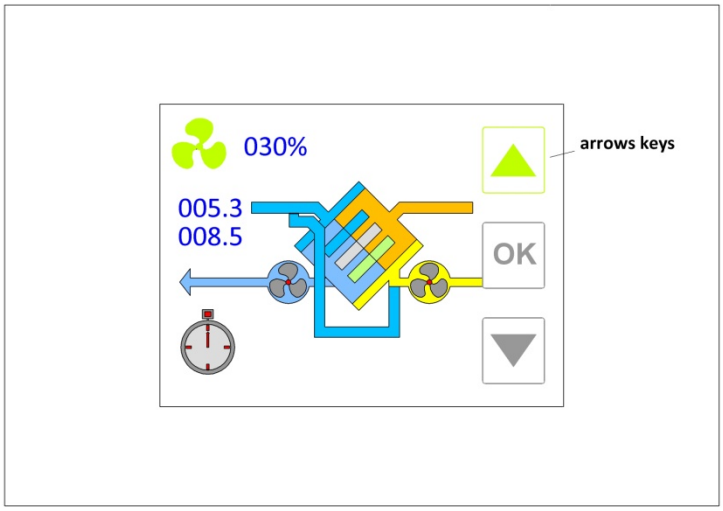
Unit with by-pass

Fan Speed Control

In order to change this parameter, press the top left icon in the synoptic display to select it (it will turn green and the arrow keys will appear). Then, press the up arrow key icon to increase or the down arrow key to reduce the percentage value on its side; once the desired value is found, press OK to confirm your selection.

Beyond the 100% value, the **timer** item will appear: if this item is selected, the preset weekly schedule will be started (see *Program* menu). If the unit is also equipped with an air quality or relative humidity probe, or the analog input (0-10V) is enabled that control the fan

speed, also the **auto** option will be available (still beyond the 100% value), which enables the fan speed to be automatically adjusted according to the CO2 value, the detected humidity or an external signal.



Changing the fan speed

In detail, the possible options are as follows:

- **off**: fans are motionless with this option, but watch out that the unit is live anyway; this value is achieved by going below the minimum speed value that can be set;

- xxx%: if the unit is equipped with continuously variable speed fans, a fan speed percentage value can be set starting from the minimum value (factory setting) up to 100% of the available speed with 5% steps (1% on request);

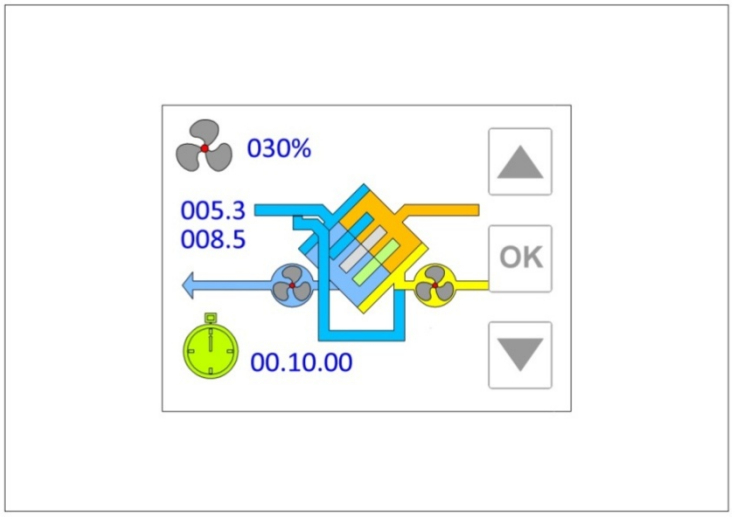
-1, 2 or 3: if the unit is equipped with 3-speed fans, one of the available speeds can be selected: speed 1, speed 2 or speed 3.

- clock: with this option, the fan speed is controlled according to the weekly schedule (see ***Program*** menu). This value is achieved by selecting a greater value than the maximum speed (100% or 3);

- auto: this option is only available when a sensor (CO2, CO2-VOC or RH relative humidity) is available on whose measure depends the fan speed. If an external signal (0-10V) is used to control the fan speed, this value is obtained by selecting a greater value than *clock*.

Booster Function

The booster function is accessed when the bottom left icon is selected; a time period (from minimum 1 minute to maximum 4 hours) can be selected, in which the unit can run at the maximum speed. The booster function has the priority over any other fan speed control method.



Booster function

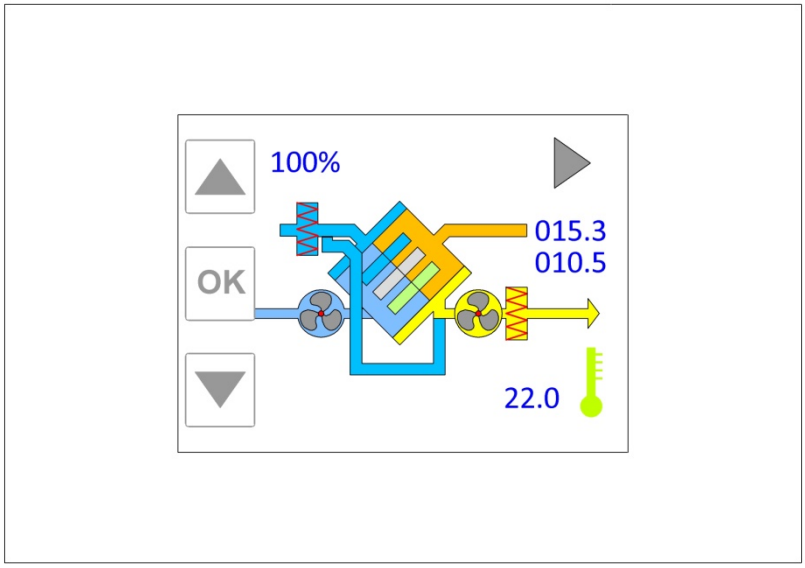
After you select the function, a digital chronometer is displayed (**hours.minutes.seconds**), which is preset on a 10 minute value. Such a value can be changed by means of the arrow keys on the right side of the screen: up to increase the booster time and down to reduce that time. After selecting the desired time, press **OK** to start the functionality: the display shows the remaining time to the end of the procedure. When the 00.00.00 value is reached, the speed returns to be controlled in the previously selected way.

When you want to stop the procedure, just repeat the booster setting operations and select a 0-minute time and press **OK**.

Air Post-Treatment Control

The control can run an air post-treatment system with a water-powered battery (modulation of a 3-point solenoid valve or with a 0-10V signal, or on-off control of a 3-point solenoid valve) or an electric resistance (controlled through an on-off control or a PWM-type modulation). In case of a water-powered battery, post-heating and/or post-cooling control are viable options, while in case of an electric resistance, of course post-heating only can be controlled. The presence and type of post-heating to be installed must be selected in the factory.

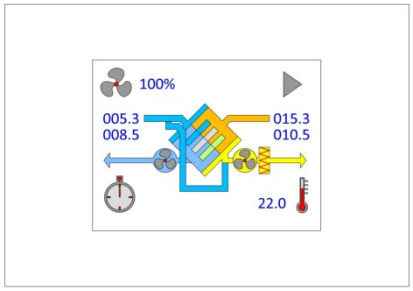
If post-heating control is set, the main screen is changed: an icon representing a thermometer with a temperature value on its side is displayed in the top right corner, while a box representing post-heating is displayed on the delivery airflow.



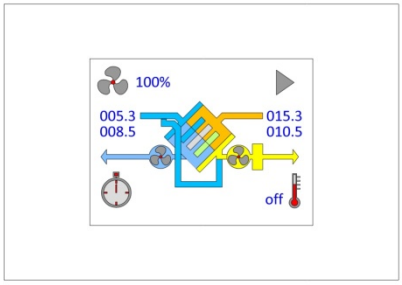
Changing temperature set-point

When the bottom right corner icon is selected, the desired interior temperature set-point (T_S) function is accessed: the user can increase the T_S value by the up arrow key or, vice versa, reduce it by the down arrow key. Once the desired value is achieved, the selection is confirmed by pressing **OK**. T_S can take values between 05,0°C and 30,0 °C with 00,1°C steps. If the user selects a T_S value lower than 05,0, the control assumes the post-heating to be off and the off writing is displayed on the screen near the set point temperature icon.

The post-heating status is displayed in the main window:



Post-heating on

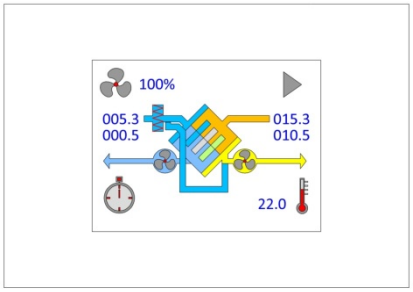


Post-heating off

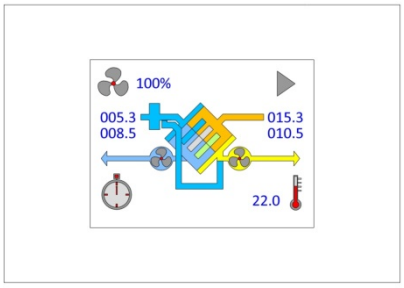
Preheating Control (only EVO-PH)

In addition to post-heating, the EVO-PH control can run an electric preheating system (controlled by a PWM-type signal) to prevent the formation of ice in the heat exchanger. The control starts the anti-frost procedure automatically when the temperature detected by the exhaust probe (Tx) drops below 3°C. The heater is powered at the minimum power, if the Tx temperature keeps dropping, the pre-heater power is increased step-by-step up to 100% if Tx reaches 1°C. When Tx exceeds 3°C, the procedure stops. The 3°C and 1°C temperature values are set in the factory and can be changed on request.

The preheating status is displayed in the main window:



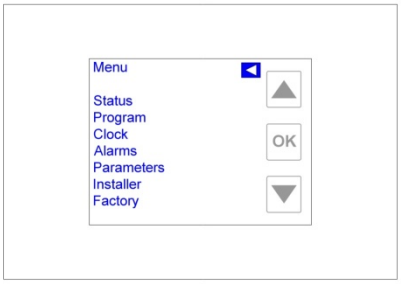
Preheating on



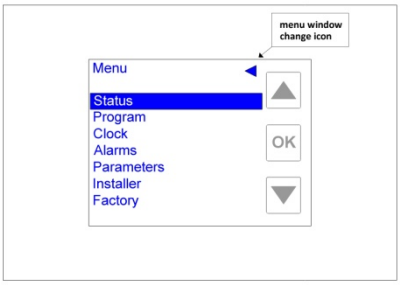
Preheating off

Menu Selection Window

The menu window is accessed from the main window by touching the specific icon (window change icon); the white-text-on-blue-background top right icon indicates it is selected: then, scroll with the down arrow key and then press **OK** on the desired item. When the menus are selected (press the down arrow key up to highlight the desired option and press **OK** to confirm the selection), the various detailed information of the system is accessed.



Menu selection window



Highlighted menu and window change icon

menu window change icon

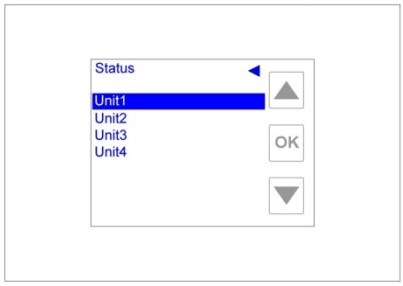
The functions listed here below can be accessed from the menu window:

- Status;
- Program;
- Clock;
- Alarms;
- Installer;
- Factory (password protected, can only be accessed by the factory).

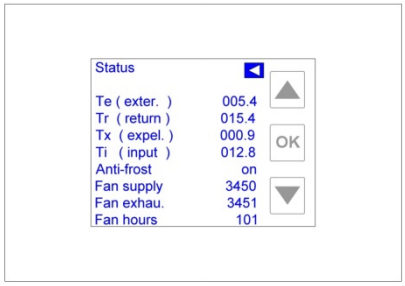
The main window is accessed from the Menu window by pressing the up arrow key until the window change icon is highlighted, then pressing **OK**.

STATUS MENU: OPERATING STATUS

If the remote control panel is used to run several units (master-slave mode), a screen will be displayed in the menu with the list of available machines (max 4):



Selection of units to be monitored, master/slave configuration



Display of the Status menu

In order to display the status of one unit, you must select this unit (move by means of the arrow keys and confirm your selection by pressing OK)

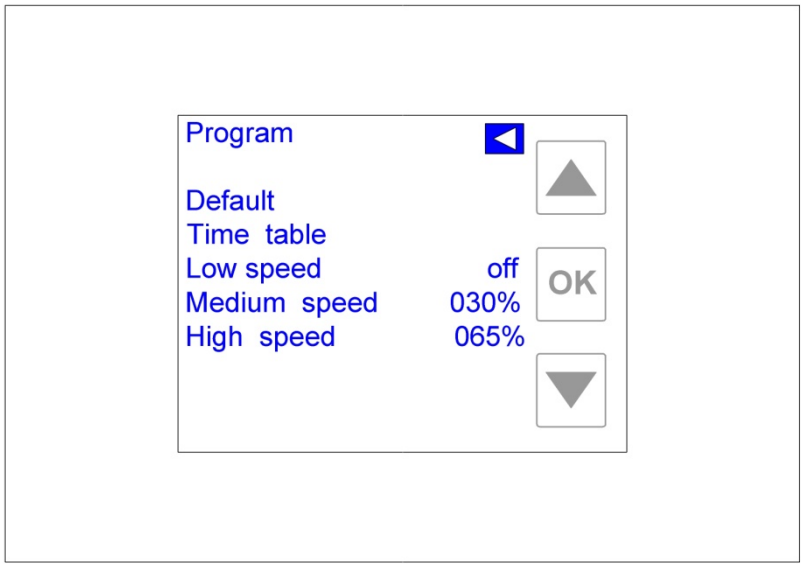
If the control is configured to run one unit, when this menu is accessed, the status of this unit can be seen right away and the values of the characterizing parameters are displayed; all parameters can be scrolled by using the up and down arrow keys:

Te (exter.)	**Te (esterna)**	Temperature of external air in °C
Tr (return)	**Tr (ripresa)**	Temperature of return air in °C
Tx (expelled)	**Tx (espulsa)**	Temperature of expelled air in °C
Ti (input only evo-ph)	**Ti (ingresso solo evo-ph)**	Temperature of input air in °C
Tw (water only evo-ph)	**Tw (acqua solo evo-ph)**	It is on if water-powered battery-operated post-heating is available: it shows the temperature of the water from the battery, and is expressed in °C
Wat.anti-frost (only evo-ph)	**Antig. Acqua (solo evo-ph)**	It is on if post-heating is set through water-powered battery and indicates whether the **anti-frost** mode is active. The **anti-frost** function for the battery starts when the temperature detected by the Tw probe (located on the battery) drops below 3°C and then goes off when the temperature returns above 5°C (3+2). When a temperature lower than 3° C is detected, the control valve (hot water) is fully opened in order to prevent ice formation in the elements. Afterwards, if Tw drops below 1°C, also the fans will be stopped and an alarm will be signaled (see ALARM menu). The two temperature levels 3°C and 1°C can be modified (FACTORY menu).
Anti-frost	**Antig. batt.**	**Anti-frost** function status (ON-OFF). The anti-frost function starts automatically when the temperature detected by the Tx probe drops below 1°C and then goes off when the temperature rises above 3°C. The purpose is to avoid ice formation in the heat exchanger. When it is on, there are two different control methods according to the factory settings: - when the **anti-frost** is controlled by a preheating resistance, the latter is triggered until 3°C is reached. - when the **anti-frost** is controlled through the adjustment of the fan speed, the input fan will be blocked and the return fan will be powered to the maximum speed at the same time.

		All the above until 3°C is reached.
Fan (supply)	**Vent.(ingr.)**	Supply fan speed value, which is expressed in: - **revolutions per minute** (**RPMs)** if fans with tachometric signal are installed; - **percentage** if variable speed fans without tachometric signal are installed (Off when the fan is off); - **Off, 1 ,2 or 3** for 3-speed fans.
Fan (exhau.)	**Vent.(estr.)**	Expulsion fan speed, see above.
Fan hours	**ore Vent.**	Unit operation hours.
By-pass	**By-pass**	It is on if the by-pass is configured: - **On** By-pass open; - **Off** By-pass closed.
Heat	**riscald.**	It is on if the water or electric air after-treatment is configured: - **On** post-treatment on; - **Off** post-treatment off.
CO_2 /VOC ppm	**CO_2 /VOC ppm**	It is on if a CO_2 or CO_2/VOC probe is present: it indicates the CO_2 or CO_2/VOC concentration in parts per million (ppm) detected by the air quality probe: it can take values between 0 and 2000.
Humidity %	**Umidità %**	It is on if a relative humidity probe is present: it indicates the percentage relative humidity value detected by the probe. It can take values between 0 and 100.
Auto ext .%	**Auto est .%**	It is on if the automatic operation of fans is configured through a 0-10V external signal. It indicates the percentage value of the external signal (10V corresponds to 100%).
Remote	**Remote**	It is on if the digital input (DI) is configured as ***remote*** (this parameter can be set in the factory): - **On** if the DI is open (the fans run at the speed set on the remote panel); - **Off** if the DI is closed (fans are still).
Boost (only evo-ph)	**Boost (solo evo-ph)**	It is on if the digital input (DI) is configured as ***booster*** (this parameter can be set in the factory): - **end** the DI is open and a longer time than *Boost min.* has lapsed after the last change of DI status (from closed to open), booster off (fans at the speed set by the control); - **Max** the DI is closed or the *Boost min.* time (1→ 240 minutes) has not lapsed yet since the DI has passed from closed to open, booster on (fans at the maximum speed).
PIR	**PIR**	It is on if the digital input (DI) is configured as ***PIR*** (this parameter can be set in the factory): - **min** the DI is open (fans at minimum speed); - **max** the DI is closed (fans at the maximum speed) and the *PIR min.* time (1→ 240 minutes) fixed in the installer menu has not lapsed yet ; - **off** the DI is closed (fans at the speed set by the user on the control) and the *PIR min.* has lapsed after the DI input has closed.
Summer	**estate**	It is on if the remote digital input is configured as **summer** (from the factory). - **Yes** the DI is open, the *summer* season is set; - **No** the DI is closed, the *winter* season is set.
Humidity	**Umidità**	It is on if the remote digital input is configured as **humidity** (from the factory). - **Yes** the DI is closed, the humidity threshold of the hygrostat has been overcome; - **No** the DI is open, the hygrostat humidity threshold has been not overcome.
Fire	**fuoco**	It is on if the remote digital input is configured as **fire** (from the factory). - **Yes** the DI is open (exhaust fan at the maximum speed and delivery fan off). - **No** the DI is closed (fans at the speed set by the control).

PROGRAM Menu: Weekly Program Control

This menu controls the fan speed (on three levels) and the air after-treatment on/off options (if available) in a different way for each day of the week, by time period (1 to 8 time periods that can be defined by the user in 30-minute steps). To access the program control functions, select the **Program** item by the arrow keys, highlight it and press **OK**.



Program menu

Default

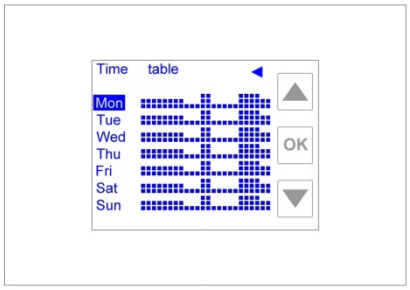
When this menu item is selected and OK is pressed, unit control parameters are automatically assigned default values:

Time table			
Program valid Monday through Friday			
Time period		Fan speed	Air after-treatment status: (ON / OFF)
C1	00:00 → 06:29	Medium	OFF
C2	06:30 → 07:59	Medium	ON
C3	08:00 → 11:29	Low	ON
C4	11:30 → 12:59	High	ON
C5	13:00 → 17:59	Low	ON
C6	18:00 → 21:59	High	ON
C7	22:00 → 00:00	Medium	OFF
C8	Not used	-	-
Program valid Saturday and Sunday			
Time period		Fan speed	Air after-treatment status: (ON / OFF)
C1	00:00 → 07:29	Medium	OFF
C2	07:30 → 07:59	Medium	ON
C3	08:00 → 11:29	Medium	ON
C4	11:30 → 12:59	High	ON
C5	13:00 → 17:59	Medium	ON
C6	18:00 → 21:59	High	ON
C7	22:00 → 00:00	Medium	OFF
C8	Not used	-	-
Speed levels			
Low speed:		**OFF**	
Medium speed:		**030%** if the unit is equipped with variable speed fans; **1** if the unit is equipped with 3-speed fans; **auto** if the unit is equipped with a CO_2 or relative humidity probe, or is controlled through a 0-10V external signal.	
High speed:		**065%** if the unit is equipped with variable speed fans; **2** if the unit is equipped with 3-speed fans; **auto** if the unit is equipped with a CO_2 or relative	

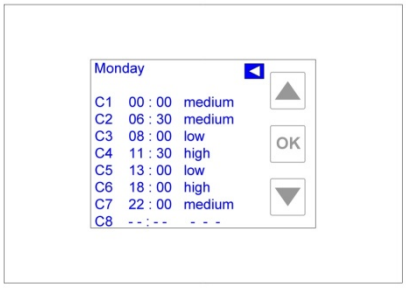
	humidity probe, or is controlled through a 0-10V external signal.

Time Table

When this menu item is selected and OK is pressed, the summary display of each day of the week subdivided into 24 hours is accessed.

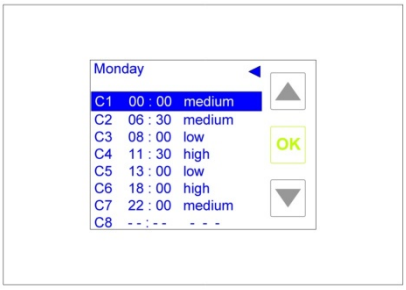


Time table: summary display

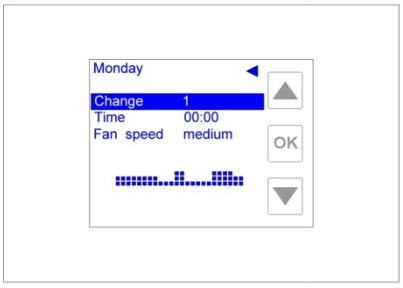


Time table: detail of one day of the week

In order to change the settings of each day, just select the day in the summary display window and press OK; now, the detail screen of the selected day is displayed with the list of the eight possible time periods (C1→C8), while the selected day of the week is displayed in the top left corner of the screen.



Selecting the time period to be changed



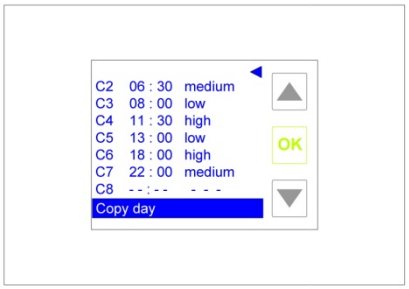
Changeable parameters in the selected time period

You can change the content of a time period by selecting the period and pressing OK in the time period change screen; the graphic summary of the program for the entire day is displayed in addition to the selected day (top left corner).

The parameters that can be changed are as follows:

- **Change X:** change the time period you are working on without returning to the previous page by selecting this line and pressing OK: scroll the several time periods (1→8) using the arrow keys and just press OK when you reach the desired period.
- **Time hh.mm**: set the starting time of the current time period by selecting this line and pressing OK: the arrows keys increase (up arrow) or decrease (down arrow) the time by 30-minute steps; press OK when you find the desired value; the value of this parameter can be comprised between the beginning of the previous time period and the beginning of the next time period.
- **Fan speed xxx**: set the fan speeds required for the current time period by selecting this line and pressing OK: scroll the three possible values (***low, medium*** and ***high***) using the arrows keys; press OK when you find the desired value. These values match the settings according to next paragraph (**Speed level setting**).
- **Post-heating on/off**: this parameter is only visible if the control is configured to run an air after-treatment device; enable (**on**) or disable (**off**) the air after-treatment device by selecting this line and pressing OK. Scroll the two possible values (***on*** and ***off***) using the arrow keys: press OK when you find the desired value.

After customizing one day of the week according to your need (for instance, Monday), you can copy your program to another day without repeating the procedure described above. In the time period summary window, select the day you want to copy the previous program to (for instance, Tuesday), and press **OK**. Now, the detail window of the time periods of the selected day Is displayed. Scroll all of the time periods using the down arrow key and reach the ***Copy day*** line (it will be after the C8 time period): highlight this line and press OK.



Selecting the copy day function

Copy day: selecting the day to be copied

After accessing the **Copy day** page (as displayed in the top left corner of the screen), you can select the day you want to copy the program from using the arrow keys to scroll the various days. After identifying the selected day (Monday in our example), press OK to confirm the copy and you are automatically taken to the simplified display page of the time periods (in our case, the Monday program will have been copied to Tuesday). This operation can be repeated for other days of the week.

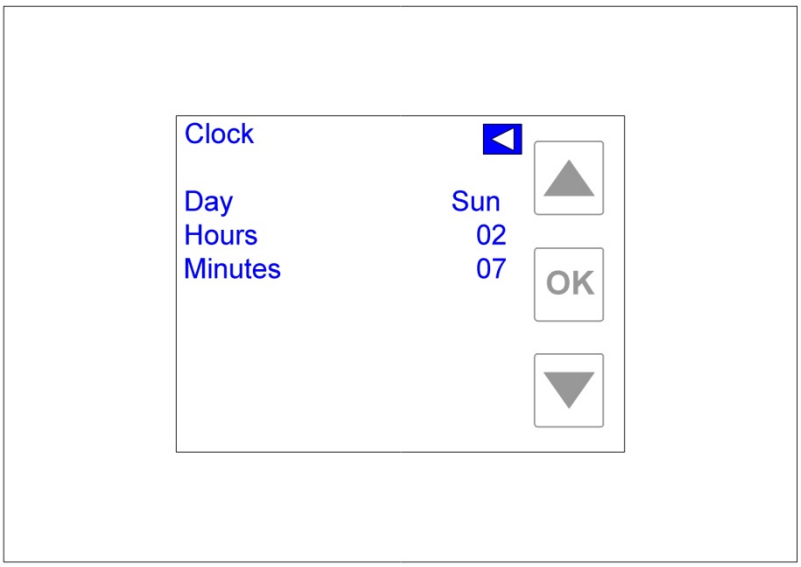
Setting Speed Levels

To change the preset values for the three speed levels (**low, medium** and **high**) used for the weekly program, reach the main page of the Program menu, highlight the speed level to be changed (for example, ***Low-speed***) using the arrow keys and press OK. Scroll the possible values by using the arrow keys and, after finding the desired value, confirm your choice by pressing OK. Possible values for these three parameters are as follows:

- **off**: fans off. It can be set by pressing the down arrow key for a few seconds (off is below the minimum speed value that can be set);
- **xxx%**: for units equipped with variable speed fans, you can select a percentage value between the minimum (factory setting) and 100%;
- **1**, **2** or **3**: for units equipped with 3-speed fans, you can choose among speed 1, 2 or 3;
- **auto:** for units equipped with an air quality or relative humidity probe or controlled through a 0-10V external signal, the fan speed will be automatically controlled by one of these devices. It can be reached by pressing the up arrow for a few seconds (auto is above the maximum speed value that can be set).

CLOCK Menu: Clock Configuration

You can set the day of the week and the current time for the proper control of the weekly time program through this menu.



Clock menu

Setting the Day

Select the **day** line and press **OK**: the color of the writing of the current day configured will turn green. Scroll by means of the arrow keys to find the desired day. Press **OK** to confirm your choice: the color of the day will turn from green to blue.

Setting the Hour

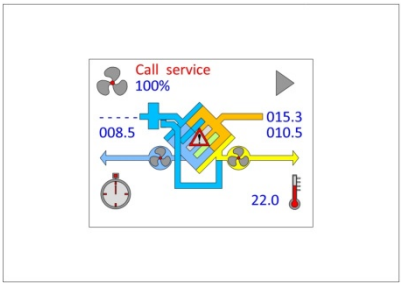
Select the **hours** line and press **OK**: the color of the writing of the current hour configured will turn green. Scroll by means of the arrow keys to find the desired day. Press **OK** to confirm your choice: the color of the day will turn from green to blue.

Setting the Minutes

Select the **minutes** line and press **OK**: the color of the writing of the minutes will turn green. Scroll by means of the arrow keys to find the desired day. Press **OK** to confirm your choice: the color of the day will turn from green to blue.

ALARMS Menu: Display of the Alarm Status

If the control detects an abnormal status, the latter is indicated in the main control screen by a specific flashing icon and a red writing at the top of the screen (*Call service* or *Dirty Filters*). If the alarm is detected when the screen is in stand-by mode, the display flashes at about 10-second intervals.



Signaling an alarm: external air temperature program

Alarms menu

If an alarm is being signaled, you can reach the specific menu directly by touching the screen. Otherwise you must select the Alarms item in the menu selection page and press **OK**. If the control is interlocked to several units (master/slave mode), you must select the unit you want to monitor (see Status menu), otherwise you direct access to the detail alarms page.

List of ALARMS			
Parameter		Val	Status
Communication	*Comunicazione*	**ok**	The communication between the machine cards and the remote control panel works properly
		ko	Problem with the communication among cards and remote panel: 1) check electrical connections between electric panel and remote panel (see wiring diagram); 2) if the problem is not solved, check electrical connections between the cards (see wiring diagram); 3) if the problem is not solved, check the dipswitch position in both cards (see …); 4) if the problem is not solved, replace the electronic cards.
Te (external)	Te (esterna)	**ok**	The external air temperature sensor works properly
		ko	Problem with the external air temperature sensor: 1) check electrical connections of the temperature probe (see wiring diagram); 2) if the problem is not solved, replace the temperature probe 3) if the problem is not solved, replace the electronic card.
Tr (return)	Tr (ripresa)	**ok**	The return air temperature sensor works properly
		ko	Problem with the return air temperature sensor: 1) check electrical connections of the temperature probe (see wiring diagram); 2) if the problem is not solved, replace the temperature probe 3) if the problem is not solved, replace the electronic card.
Tx (expelled)	Tx (espulsa)	**ok**	The exhaust air temperature sensor works properly
		ko	Problem with the expelled air temperature sensor: 1) check electrical connections of the temperature probe (see wiring diagram); 2) if the problem is not solved, replace the temperature probe 3) if the problem is not solved, replace the electronic card.
Ti (input only evo-ph)	Ti (ingresso solo evo-ph)	**ok**	The input air temperature sensor works properly
		ko	Problem with the input air temperature sensor: 1) check electrical connections of the temperature probe (see wiring diagram); 2) if the problem is not solved, replace the temperature probe 3) if the problem is not solved, replace the electronic card.
Tw (water only evo-ph)	Tw (acqua solo evo-ph)	It is present only if the air after-treatment control is equipped with a water-powered battery (*Factory* menu)	
		ok	The water-powered battery temperature sensor works properly
		ko	Problem with the water-powered battery temperature sensor: 1) check electrical connections of the temperature probe (see wiring diagram); 2) if the problem is not solved, replace the temperature probe 3) if the problem is not solved, replace the electronic card.
Tw(water) low (only evo-ph)	Tw(acqua) bassa (only evo-ph)	It is present only if the air after-treatment control is equipped with a water-powered battery (*Factory* menu)	
		ok	The temperature of the water from the battery is higher than a safety threshold, there is no risk of water freezing in the battery
		ko	Risk of liquid freezing in the water-powered battery
Filters	Filtri	It is present only if the filter status alarm with differential	

		manostat is configured or is based on the machine operation hours (*Factory* menu)	
		ok	Clean filters
		ko	Clogged filters: replace filters. If the filters alarm is based on the machine operation hours, you must reset the Filter Hours parameter (*Installer* menu)
Fans	Ventilatori	It is present only if the fan status alarm is configured with differential manostats, with tachometric signal of fans or with fan Digital Output (*Factory* menu)	
		ok	
		ko	
CO2 VOC		It is present only if the fan speed automatic control is configured with a CO_2 o CO_2-VOC sensor (*Installer* menu)	
		ok	
		ko	
RH sensor	UR sensor	It is present only if the fan speed automatic control is configured with a relative humidity sensor (*Installer* menu)	
		ok	
		ko	
Ext.signal	Segnale est.	It is present only if the fan speed control is configured with an external 0-10V analog signal (*Installer* menu)	
		ok	The external signal source works properly
		ko	External signal not present (voltage at the clamps = 0V): 1) check electrical connections of the external source (see electric diagram); 2) if the problem is not solved, check whether the external signal is present (tester) and its value is greater than 0V; 3) if the problem is not solved, replace the electronic card..
AutoMinutes	AutoMinuti	It is present only if the fan speed automatic control alarm is configured with a CO_2 o CO_2-VOC sensor, a relative humidity sensor, or with an external signal, and if the AutoMinutes parameter is set on a different value from **no** (*Installer* menu).	
		ok	Auto probe works properly
		ko	Possible anomaly in the operation of the auto probe

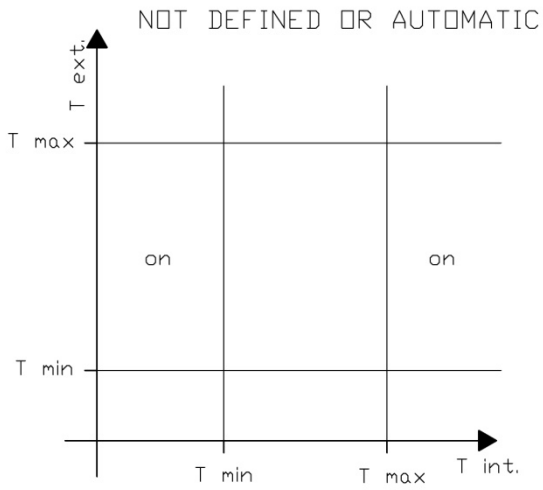
Parameters Menu: Setting User Parameters

The parameters menu is only displayed when the control is configured to run the by-pass and/or a water-powered battery in heating/cooling mode. Change the values of the available parameters by selecting the desired parameter (scroll by the arrow keys to highlight parameters) and pressing OK; now, the color of the current value of the parameter turns green. Use the arrow keys to scroll the several possible values. Press OK when you find the desired value.

By-pass configured in universal mode (*Factory* menu): three values can be selected for the by-pass parameter:

By-pass ***automat.***

A temperature range is identified between T_{MIN} and T_{MAX}, which is considered comfortable for the user; if the internal temperature (Tr) is in this range, the by-pass will remain closed. When Tr is out of this range ($Tr>T_{MAX}$ or $Tr<T_{MIN}$), the control will open the by-pass if the external temperature (Te) is comprised in the comfort range ($T_{MIN}\leq Te\leq T_{MAX}$). Otherwise, the by-pass will remain closed.



Universal **by-pass operation in automatic mode**

By-pass ***off***

The by-pass will remain closed irrespective of the internal and external temperature.

By-pass ***on***

The by-pass will remain open irrespective of the internal and external temperature.

By-pass configured in a "seasonal" mode and/or control of a water-powered battery enabled for air post-cooling (*Factory* menu). This parameter is unavailable when the digital input is configured for the automatic season change (**Factory** menu):

Winter **season**

The by-pass opens if the external temperature is higher than the internal temperature (free heating);
the water-powered battery is run in heating mode

Summer **season**

The by-pass opens if the external temperature is lower than the internal temperature (free cooling);
the water-powered battery is run in cooling mode

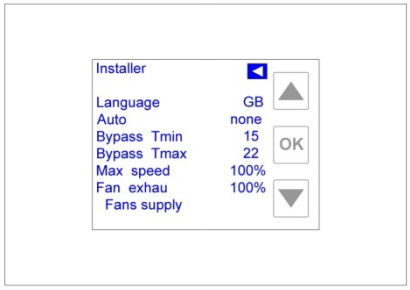
Not defined **season**

This value is only available when the water-powered battery is not provided for post-cooling;
the by-pass is run in a similar way as the automatic mode in the point above.

INSTALLER Menu: Configuration of System Parameters

You must enter a password (5678) to access this menu: this is a measure to prevent inexperienced users from unintentionally changing parameters, an event that may jeopardize the proper operation of the system.

Entering the password



Installer menu

In order to enter the password, press the up arrow key: the line where the password must be entered is highlighted. Press OK and the color of the first digit turns green: select the desired value for the first digit using the up/down arrow keys and press OK when you reach the desired value. Repeat this operation for the three remaining figures.

If you have entered the correct password, the installer menu is displayed; otherwise, if the password is wrong, you are redirected to the password entry page. To change the parameters of this menu, highlight the desired parameter by scrolling up/down the arrow keys and press OK. The color of the currently set value for this parameter is green: now, you can change this value using the up/down arrow keys. When you reach the desired value, press OK to confirm your selection.

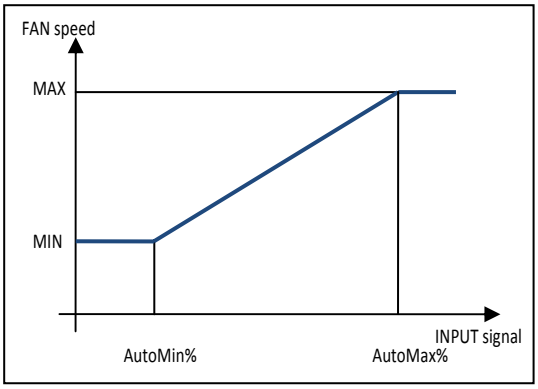
PARAMETERS AVAILABLE IN THE INSTALLER MENU

Language With this parameter, you can select the language of all menus (except for the ***Factory*** menu, which will always be in English).

GB	English language (default)
FR	French language
ES	Spanish language
IT	Italian language
NL	Dutch language

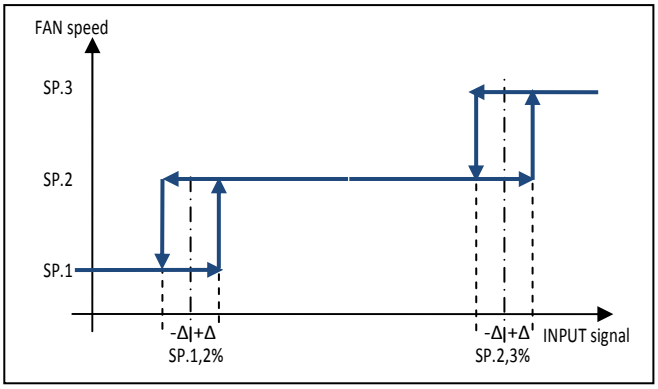
Auto With this parameter, you can configure a device that automatically adjusts the fan speed. See the wiring diagram for the connection of the device

External signal The fan speed will be controlled through an external 0-10V analog signal (default value); if the external signal takes the 0V value, the control will indicate a problem with the source of the external signal.
For a unit equipped with adjustable speed fans.



Where **AutoMin%** corresponds to the input signal percentage value for which fans must run at the minimum speed, **AutoMax%** corresponds to the input signal percentage value for which fans must run at the maximum speed.

For a unit equipped with 3-speed fans.



SP.1,2% SP.2,3% and Δ values depend on the values of parameters *AutoMin%* and *AutoMax%* according to the following formulas:

$$SP.1{,}2\% = \frac{AutoMax\% - AutoMin\%}{5} + AutoMin\%$$

$$SP.2{,}3\% = \frac{7}{10} \times (AutoMax\% - AutoMin\%) + AutoMin\%$$

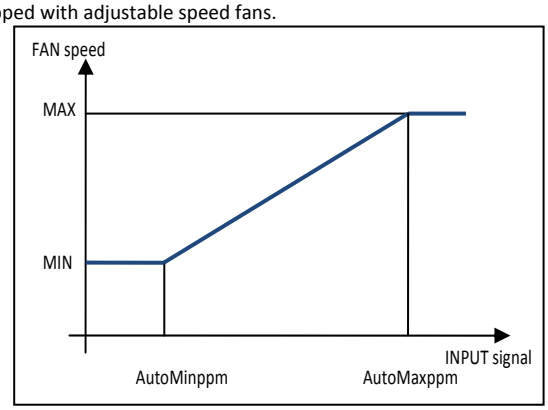
$$\Delta = \frac{AutoMax\% - AutoMin\%}{12}$$

UR sensor

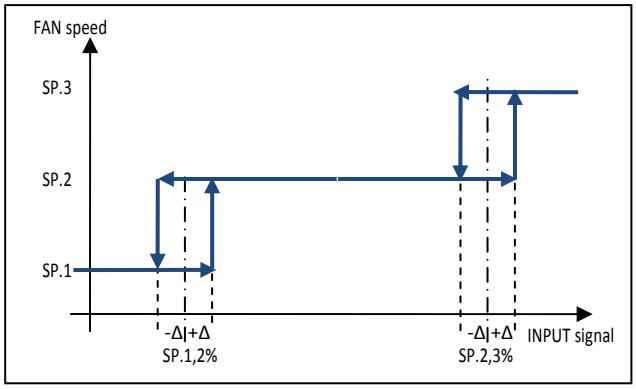
The fan speed will be controlled by a relative humidity (RH) sensor with 0-10V output and will have a linear trend between 0 and 100% RH (0V corresponds to 0% RH and 10V corresponds to 100% RH); if the external signal of the RH sensor takes the 0V value, the control will display a problem with the sensor.
See graphs of the ***segnale es*** parameter.
In this case, **AutoMin%** corresponds to the relative humidity value for which the air quality is held to be excellent, **AutoMax%** corresponds to the relative humidity value for which the air quality is held to be very bad.

CO2 VOC

The fan speed will be controlled by a CO_2 (or CO_2-VOC) sensor with a 0-10V output and will have a linear trend between 0 and 2000 ppm (0V corresponds to 0% ppm and 10V corresponds to 2000 ppm); if the external signal of the CO_2 sensor takes the 0V value, the control will display a problem with the sensor.
For a unit equipped with adjustable speed fans.



Where **AutoMin ppm** corresponds to the CO_2 (CO_2-VOC) concentration for which the air quality is held to be excellent, **AutoMax ppm** corresponds to the CO_2 (CO_2-VOC) concentration for which the air quality is held to be very bad.
For a unit equipped with 3-speed fans.



SP.1,2% SP.2,3% and Δ values depend on the values of both parameters *AutoMin ppm* and *AutoMax ppm* according to the following formulas:

$$SP.1{,}2\% = \frac{AutoMax\ ppm - AutoMin\ ppm}{5} + AutoMin\ ppm$$

$$SP.2{,}3\% = \frac{7}{10} \times (AutoMax\ ppm - AutoMin\ ppm) + AutoMin\ ppm$$

$$\Delta = \frac{AutoMax\ ppm - AutoMin\ ppm}{12}$$

none (default value) no device is installed for the automatic operation of the fan speed.

AutoMin % This parameter is only available if the **auto** parameter is set on ***ext. signal*** or ***UR sensor***. It can take values between 0 and 99% (1% steps) with the following limit: **AutoMin%<AutoMax%**
For a unit equipped with variable speed fans:
If **auto *ext. signal***
corresponds to the input signal percentage value for which fans turn at the minimum speed; below this value, fans remain set at the minimum speed. For instance, the value AutoMin% 030 corresponds to a 3V (30% of 10V) input signal.
If **auto *UR sensor***
corresponds to the (percentage) relative humidity for which fans turn at the minimum speed; below this value, fans remain set at the minimum speed.

For a unit equipped with 3-speed fans, referring to the second image of the **auto *ext. signal*** parameter, after fixing the SP.1,2% and SP.2,3% values (the nominal values at which speed changes from 1 to 2 and from 2 to 3), the appropriate value to be assigned to the parameter can be obtained as follows:

$$AutoMin\% = \frac{7 \times SP.1{,}2\% - 2 \times SP.2{,}3\%}{5}$$

AutoMax% This parameter is only available if the **auto** parameter is set on ***ext. signal*** or ***UR sensor***. It can take values between 0 and 99% (1% steps) with the following limit: **AutoMin%<AutoMax%**
For a unit equipped with variable speed fans:
If **auto *ext. signal***
corresponds to the input signal percentage value for which fans turn at the maximum speed; above this value, fans remain set at the maximum speed. For instance, the value AutoMin% 080 corresponds to an 8V (80% of 10V) input signal.
If **auto *UR sensor***
corresponds to the (percentage) relative humidity for which fans turn at the maximum speed; below this value, fans remain set at the maximum speed.
For a unit equipped with 3-speed fans, referring to the second image of the **auto *ext. signal*** parameter, after fixing the SP.1,2% and SP.2,3% values (the nominal values at which speed changes from 1 to 2 and from 2 to 3), the correct value to be assigned to the parameter can be obtained as follows:

$$AutoMax\% = \frac{8 \times SP.2{,}3\% - 3 \times SP.1{,}2\%}{5}$$

AutoMin ppm This parameter is only available if the **auto** parameter is set on ***CO2 VOC***. It can take values between 0 ppm and 1980 ppm (20ppm steps) with the following limit: **AutoMin ppm<AutoMax ppm**
For a unit equipped with variable speed fans, it corresponds to the CO_2 (CO_2-VOC) concentration, expressed in ppm, for which fans turn at the minimum speed; below this value, fans remain set at the minimum speed.
For a unit equipped with 3-speed fans, referring to the second image of the **auto *CO2 VOC*** parameter, after fixing the SP.1,2% and SP.2,3% values (the nominal values at which speed changes from 1 to 2 and from 2 to 3), the correct value to be assigned to the parameter can be obtained as follows:

$$AutoMin\ ppm = \frac{7 \times SP.1{,}2\% - 2 \times SP.2{,}3\%}{5}$$

AutoMaxppm This parameter is only available if the **auto** parameter is set on ***CO2 VOC***. It can take values between 20 ppm and 2000 ppm (20ppm steps) with the following limit: **AutoMin ppm<AutoMax ppm**
For a unit equipped with variable speed fans, it corresponds to the CO_2 (CO_2-VOC) concentration, expressed in ppm, for which fans turn at the maximum speed; below this value, fans remain set at the maximum speed.
For a unit equipped with 3-speed fans, referring to the second image of the **auto *CO2 VOC*** parameter, after fixing the SP.1,2% and SP.2,3% values (the nominal values at which speed changes from 1 to 2 and from 2 to 3), the correct value to be assigned to the parameter can be obtained as follows:

$$AutoMax\ ppm = \frac{8 \times SP.2{,}3\% - 3 \times SP.1{,}2\%}{5}$$

AutoMinutes This parameter is only available if the **auto** is set at a value different from ***none***.
No (default value) it does not affect the system operation.
000→240 Its value is expressed in minutes and represents the interval lapsed from the time when the signal of the extern device for the auto mode has achieved or exceeded the ***AutoMax%***, or ***Auto Max ppm*** value, without dropping below this value, beyond which an anomaly to the external device (CO_2, HR probe or external signal) is notified.

AutoOn % **(only evo-ph)** This parameter is only available if the **auto** parameter is set on ***ext. signal*** or ***UR sensor*** and the digital output is configured as ***auto cmp***.
000→100 Default value ***050***, is expressed in %; for values of HR% as read by the relative humidity sensor (or for values of the 0-10V external signal expressed as a percentage) lower than the set value, the digital output changes its status.

AutoOff% **(only evo-ph)** This parameter is only available if the **auto** parameter is set on ***ext. signal*** or ***UR sensor*** and the digital output is configured as ***auto cmp***.
000→100 Default value ***050***, it is expressed in %; for values of HR% as read by the relative humidity sensor (or for values of the 0-10V external signal expressed as a percentage) higher than the set value, the digital output returns to its standard status.

AutoOn ppm **(only evo-ph)** This parameter is only available if the **auto** parameter is set on ***CO2 VOC*** and the digital output is configured as ***auto cmp***.
0000→2000 Default value ***0500***, it is expressed in ppm; for ppm values as read by the CO_2 probe lower than the set value, the digital output changes its status.

AutoOff ppm **(only evo-ph)** This parameter is only available if the **auto** parameter is set on ***CO2 VOC*** and the digital output is configured as ***auto cmp***.
0000→2000 Default value ***0500***, it is expressed in ppm; for higher values of ppm as read by the CO_2 probe than the set one, the digital output returns to its standard status.

By-pass Tmin This parameter is on if the control is configured for the control of the by-pass (**Factory** menu)
12→18 Default value 15, it is expressed in degrees centigrade. It is the minimum temperature value (T min) the system will refer to for the control of the by-pass if **By-pass *automat.*** or **Stagione *non def.*** are set in the **Parameters** menu (see **Parameters** menu).

By-pass Tmax This parameter is on if the control is configured for the running of the by-pass (**Factory** menu)
20→30 Default value ***22***, it is expressed in degrees centigrade. It is the maximum temperature value (T max) the system will refer to for the control of the by-pass if **By-pass *automat.*** or **Stagione *non def.*** are set in the **Parameters** menu (see **Parameters** menu).

Filter hours This parameter is on when the clogged filters alarm is based on the hours of operation of the unit (**Factory** menu)
00000→99999 Default value ***02000***, it is expressed in hours. It represents the number of operation hours of the unit after which the clogged filters alarm is triggered. In order to reset the alarm, the installer will have to set the new limit at which the alarm must be signaled (check the current operation hours in the parameters status menu **Fan hours**):

$$Filters\ hours\ =\ Fan\ hours\ +\ hours\ for\ a\ new\ alarm$$

Max speed This parameter is available if the control is set to run variable speed fans (**Factory** menu)
055%→100% Default value ***100%***, it is the maximum fan speed expressed as a percentage of the nominal value (reduction of the maximum speed).
The maximum speed that can be set in the main window will always be 100% also for **Vel.max** values lower than 100%; what changes is the minimum speed value that can be set by the final user:

$$Minimum\ speed\ = INT_{ECCESSO}\left(\frac{V_{MIN} \times 100}{V_{MAX} \times step}\right) \times step$$

$$\begin{cases} V_{MAX} = \dfrac{Max\ speed\ \times V_E}{100} & se\ V_E \leq 100 \\ V_{MAX} = \dfrac{Max\ speed\ \times 100}{V_E} & se\ V_E > 100 \end{cases}$$

V_E= percentage of exhaust fan speed vs input fan (see next paragraph)
$INT_{ECCESSO}$ = rounds up to the next integer
V_{MIN} = minimum speed set in the Factory menu
step = discrete values of the speed values that can be set (5%, it can be set at 1% on specific request, **Factory** menu)

Exh. Fan = XXX% Input Fan This parameter is available if the control is set to run variable speed fans (**Factory** menu)
074%→135% Default value ***100%***, it expresses, in a percentage format, the desired ratio between the exhaust fan speed and the input fan speed that generates an imbalance between the air flows.
The maximum speed that can be set in the main window will always be 100%, what changes is the minimum speed value that can be set by the final user (see **Max. speed**).

Ti (in)min (only evo-ph)

This parameter is available if the control is set to run an electric or modulated water-based after heating system (no water-based cooling)

16→20 Default value ***18***, it is expressed in degrees centigrade; it is the minimum value of the range in which the control keeps the temperature of the delivery air flow:

$$T_I \in [T_I(in)min \quad T_I(in)max]$$

Ti min inv. (only evo-ph)

This parameter is available if the control is set to run a modulated water-based air after-treatment system.

16→20 Default value ***18***, it is expressed in degrees centigrade; it is the minimum value of the range in which the control keeps the temperature of the delivery air flow in heating mode (**Parameters** menu**, *Winter* season**):

$$T_I \in [T_I\, min\, inv. \quad T_I(in)max]$$

Ti min est. (only evo-ph)

This parameter is available if the control is set to run a modulated water-based air after-treatment system (heating/cooling).

20→24 Default value ***22***, it is expressed in degrees centigrade; it is the minimum value of the range in which the control keeps the temperature of the delivery air flow in cooling mode (**Parameters** menu**, *Summer* season**):

$$T_I \in [T_I\, min\, est. \quad T_I(in)max]$$

Ti (in)max (only evo-ph)

This parameter is available if the control is set to run an electric after-heating system or a modulated water-based heating/cooling system.

28→32 Default value ***30***, it is expressed in degrees centigrade; it is the maximum value of the range in which the control keeps the temperature of the delivery air flow in heating or cooling mode (see parameters **Ti (in)min**, **Ti min inv.** and **Ti min est.**).

Valv.sec. (only evo-ph)

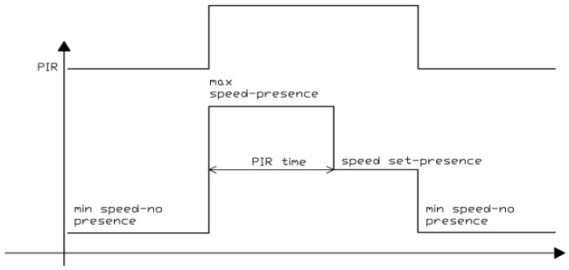
This parameter is available if the control is set to run a modulated water-based post heating/cooling system.

60→600 Default value ***120***, it is expressed in seconds; it indicates the opening/closing time of the solenoid valve, it is adjustable in 10-second steps.

Pir min.

This parameter is available if the digital input is configured at the ***PIR*** value (**Factory** menu)

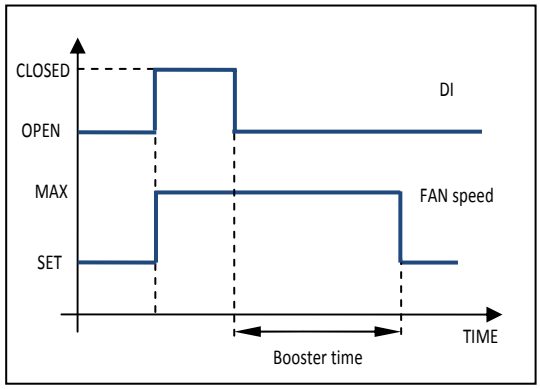
001→240 Default value ***10***, it is expressed in minutes; it is the time during which the fans run at the maximum speed after the pulse (closing of a NO contact) from a presence detector. After this lapse, the fans will return to run at the speed set from the control panel until the pulse from the presence detector is lost; since now on, the fans will run at the minimum speed.



Boost min. (only evo-ph)

This parameter is available if the digital input is configured at the ***booster*** value (**Factory** menu)

001→240 Default value ***10***, is expressed in minutes; after the pulse from an external contact (closing of a NO contact) the fans run at the maximum speed (booster). When the pulse from the external contact is lost (external contact open), the fans keep running at the maximum speed for the time fixed by this parameter. When the booster function is off, the fans run at the speed set on the control panel.

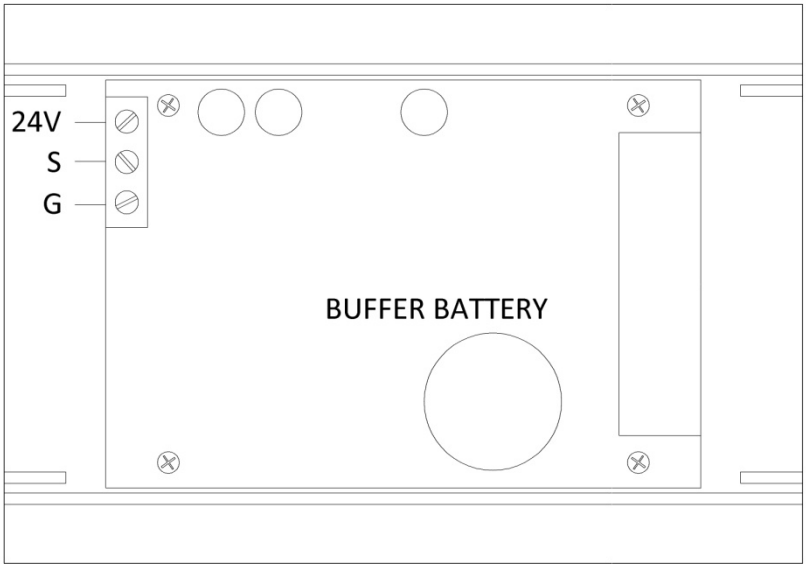


Installation

Installation must be carried out by expert staff. For the best operation, the remote panel must be fixed to an indoor wall about 1.5 m above the floor, far from heating sources (radiators, stoves, etc.), and must be not exposed to direct sun rays. It must be not installed near doors, which might damage the electronics if slammed.

Wiring

Connect the power supply to the 24V and G terminals, matching the correct polarity. Connect the BUS to the S terminal. Using a min. 0.3 mm2 section shielded cable is recommended. In case of communication errors, check the connections between the remote panel and the electronic card.



Remote panel: rear view

Characteristics

Power: 9 / 30 VDC 250mW, operating temperature between 0° and 50 °C; storage temperature between -20 °C and 70 °C.

Terms of Guarantee

The two-year (24-month) guarantee period starts from the receipt of the equipment: the date of receipt must be indicated in the purchase invoice. In the guarantee term, the manufacturer will repair all defects arising from manufacturing mistakes or material faults free of charge. It will replace defective parts or the whole equipment at its own discretion. Any other request for guarantee service is excluded. The manufacturer also waives any liability for subsequent damages. Goods that are claimed to be defective must be shipped to the manufacturer through the dealer, together with a detailed description of the fault written by the dealer. Shipment cost will be charged to the customer. The manufacturer shall bear the cost of returning the repaired goods. In no case will the manufacturer be responsible for defects caused by improper use that does not comply with the user manual provided, and natural catastrophic events like lightning, floods, earthquakes, fire, etc. The manufacturer also waives any liabilities for repairs or changes to the equipment made by any people foreign to the manufacturing company.